



June 04, 2015

Vista Project I.D.: 1500447

Mr. James Fleer
McKesson Corporation
14348 Nieman Road
Overland Park, KS 66221

Dear Mr. Fleer,

Enclosed are the results for the sample set received at Vista Analytical Laboratory on May 19, 2015. This sample set was analyzed on a rush turn-around time, under your Project Name 'Arkwood'.

Vista Analytical Laboratory is committed to serving you effectively. If you require additional information, please contact me at 916-673-1520 or by email at mmaier@vista-analytical.com.

Thank you for choosing Vista as part of your analytical support team.

Sincerely,

A handwritten signature in blue ink, appearing to read "Martha Maier", followed by the word "FDR" in a smaller, less legible script.

Martha Maier
Laboratory Director



Vista Analytical Laboratory certifies that the report herein meets all the requirements set forth by NELAC for those applicable test methods. Results relate only to the samples as received by the laboratory. This report should not be reproduced except in full without the written approval of Vista.



9595775

Vista Work Order No. 1500447

Case Narrative

Sample Condition on Receipt:

Two aqueous samples were received in good condition and within the method temperature requirements. The samples were received and stored securely in accordance with Vista standard operating procedures and EPA methodology.

Analytical Notes:

EPA Method 1613

These samples were extracted and analyzed for tetra-through-octa chlorinated dioxins and furans by EPA Method 1613 using a ZB-5MS GC column.

Holding Times

These samples were extracted and analyzed within the method hold times.

Quality Control

The Initial Calibration and Continuing Calibration Verifications met the method acceptance criteria.

A Method Blank and Ongoing Precision and Recovery (OPR) sample were extracted and analyzed with the preparation batch. No analytes were detected in the Method Blank. The OPR recoveries were within the method acceptance criteria.

Labeled standard recoveries for all QC and field samples were within method acceptance criteria.

TABLE OF CONTENTS

Case Narrative.....	1
Table of Contents.....	3
Sample Inventory.....	4
Analytical Results.....	5
Qualifiers.....	10
Certifications.....	11
Sample Receipt.....	12

Sample Inventory Report

Vista Sample ID	Client Sample ID	Sampled	Received	Components/Containers
1500447-01	Weir	18-May-15 11:45	19-May-15 09:24	Amber Glass NM Bottle, 1L Amber Glass NM Bottle, 1L
1500447-02	Mouth	18-May-15 12:00	19-May-15 09:24	Amber Glass NM Bottle, 1L Amber Glass NM Bottle, 1L

ANALYTICAL RESULTS

Sample ID: Method Blank				EPA Method 1613B				
Matrix:	Aqueous	QC Batch:	B5F0002	Lab Sample: B5F0002-BLK1				
Sample Size:	1.00 L	Date Extracted:	01-Jun-2015 8:08	Date Analyzed : 03-Jun-15 14:10 Column: ZB-5MS Analyst: MAS				
Analyte	Conc. (pg/L)	DL	EMPC	Qualifiers	Labeled Standard	%R	LCL-UCL	Qualifiers
2,3,7,8-TCDD	ND	0.701			IS 13C-2,3,7,8-TCDD	79.5	25 - 164	
1,2,3,7,8-PeCDD	ND	1.60			13C-1,2,3,7,8-PeCDD	78.8	25 - 181	
1,2,3,4,7,8-HxCDD	ND	2.80			13C-1,2,3,4,7,8-HxCDD	74.8	32 - 141	
1,2,3,6,7,8-HxCDD	ND	2.72			13C-1,2,3,6,7,8-HxCDD	75.2	28 - 130	
1,2,3,7,8,9-HxCDD	ND	2.71			13C-1,2,3,7,8,9-HxCDD	74.9	32 - 141	
1,2,3,4,6,7,8-HpCDD	ND	2.17			13C-1,2,3,4,6,7,8-HpCDD	70.2	23 - 140	
OCDD	ND	3.42			13C-OCDD	65.2	17 - 157	
2,3,7,8-TCDF	ND	0.563			13C-2,3,7,8-TCDF	80.5	24 - 169	
1,2,3,7,8-PeCDF	ND	0.944			13C-1,2,3,7,8-PeCDF	75.0	24 - 185	
2,3,4,7,8-PeCDF	ND	0.999			13C-2,3,4,7,8-PeCDF	77.0	21 - 178	
1,2,3,4,7,8-HxCDF	ND	0.869			13C-1,2,3,4,7,8-HxCDF	74.3	26 - 152	
1,2,3,6,7,8-HxCDF	ND	0.893			13C-1,2,3,6,7,8-HxCDF	73.8	26 - 123	
2,3,4,6,7,8-HxCDF	ND	1.02			13C-2,3,4,6,7,8-HxCDF	73.1	28 - 136	
1,2,3,7,8,9-HxCDF	ND	0.911			13C-1,2,3,7,8,9-HxCDF	68.7	29 - 147	
1,2,3,4,6,7,8-HpCDF	ND	0.991			13C-1,2,3,4,6,7,8-HpCDF	57.3	28 - 143	
1,2,3,4,7,8,9-HpCDF	ND	0.770			13C-1,2,3,4,7,8,9-HpCDF	59.4	26 - 138	
OCDF	ND	1.89			13C-OCDF	58.8	17 - 157	
					CRS 37Cl-2,3,7,8-TCDD	90.2	35 - 197	
					Toxic Equivalent Quotient (TEQ) Data			
					TEQMinWHO2005Dioxin	0.00		
TOTALS								
Total TCDD	ND	0.701						
Total PeCDD	ND	1.60						
Total HxCDD	ND	4.05						
Total HpCDD	ND	2.17						
Total TCDF	ND	0.563						
Total PeCDF	ND	2.08						
Total HxCDF	ND	1.03						
Total HpCDF	ND	1.02						

DL - Sample specific estimated detection limit

EMPC - Estimated maximum possible concentration

LCL-UCL- Lower control limit - upper control limit

Min-The TEQ is calculated using zero for the concentration of congeners that are not detected.

Sample ID: OPR					EPA Method 1613B		
Matrix: Aqueous Sample Size: 1.00 L		QC Batch: B5F0002 Date Extracted: 01-Jun-2015 8:08			Lab Sample: B5F0002-BS1 Date Analyzed: 03-Jun-15 11:46 Column: ZB-5MS Analyst: MAS		
Analyte	Amt Found (pg/L)	Spike Amt	%R	Limits	Labeled Standard	%R	LCL-UCL
2,3,7,8-TCDD	165	200	82.7	67 - 158	IS 13C-2,3,7,8-TCDD	76.0	20 - 175
1,2,3,7,8-PeCDD	909	1000	90.9	70 - 142	13C-1,2,3,7,8-PeCDD	76.1	21 - 227
1,2,3,4,7,8-HxCDD	939	1000	93.9	70 - 164	13C-1,2,3,4,7,8-HxCDD	69.4	21 - 193
1,2,3,6,7,8-HxCDD	886	1000	88.6	76 - 134	13C-1,2,3,6,7,8-HxCDD	75.4	25 - 163
1,2,3,7,8,9-HxCDD	888	1000	88.8	64 - 162	13C-1,2,3,7,8,9-HxCDD	70.6	21 - 193
1,2,3,4,6,7,8-HpCDD	862	1000	86.2	70 - 140	13C-1,2,3,4,6,7,8-HpCDD	65.6	26 - 166
OCDD	1840	2000	91.9	78 - 144	13C-OCDD	61.9	13 - 199
2,3,7,8-TCDF	176	200	87.9	75 - 158	13C-2,3,7,8-TCDF	74.1	22 - 152
1,2,3,7,8-PeCDF	897	1000	89.7	80 - 134	13C-1,2,3,7,8-PeCDF	74.5	21 - 192
2,3,4,7,8-PeCDF	882	1000	88.2	68 - 160	13C-2,3,4,7,8-PeCDF	77.4	13 - 328
1,2,3,4,7,8-HxCDF	948	1000	94.8	72 - 134	13C-1,2,3,4,7,8-HxCDF	68.1	19 - 202
1,2,3,6,7,8-HxCDF	1120	1000	112	84 - 130	13C-1,2,3,6,7,8-HxCDF	50.4	21 - 159
2,3,4,6,7,8-HxCDF	916	1000	91.6	70 - 156	13C-2,3,4,6,7,8-HxCDF	71.3	22 - 176
1,2,3,7,8,9-HxCDF	927	1000	92.7	78 - 130	13C-1,2,3,7,8,9-HxCDF	69.1	17 - 205
1,2,3,4,6,7,8-HpCDF	899	1000	89.9	82 - 122	13C-1,2,3,4,6,7,8-HpCDF	56.9	21 - 158
1,2,3,4,7,8,9-HpCDF	864	1000	86.4	78 - 138	13C-1,2,3,4,7,8,9-HpCDF	56.8	20 - 186
OCDF	1820	2000	91.1	63 - 170	13C-OCDF	57.3	13 - 199
					CRS 37Cl-2,3,7,8-TCDD	90.8	31 - 191

LCL-UCL - Lower control limit - upper control limit

Sample ID: Weir					EPA Method 1613B				
Client Data			Sample Data		Laboratory Data				
Name:	McKesson Corporation		Matrix:	Aqueous	Lab Sample:	1500447-01	Date Received:	19-May-2015 9:24	
Project:	Arkwood		Sample Size:	1.00 L	QC Batch:	B5F0002	Date Extracted:	01-Jun-2015 8:08	
Date Collected:	18-May-2015 11:45				Date Analyzed :	03-Jun-15 17:23	Column: ZB-5MS	Analyst: MAS	
Analyte	Conc. (pg/L)	DL	EMPC	Qualifiers	Labeled Standard		%R	LCL-UCL	Qualifiers
2,3,7,8-TCDD	ND	1.31			IS	13C-2,3,7,8-TCDD	88.1	25 - 164	
1,2,3,7,8-PeCDD	ND	1.99				13C-1,2,3,7,8-PeCDD	82.2	25 - 181	
1,2,3,4,7,8-HxCDD	3.30			J		13C-1,2,3,4,7,8-HxCDD	79.2	32 - 141	
1,2,3,6,7,8-HxCDD	26.4					13C-1,2,3,6,7,8-HxCDD	82.2	28 - 130	
1,2,3,7,8,9-HxCDD	4.86			J		13C-1,2,3,7,8,9-HxCDD	82.5	32 - 141	
1,2,3,4,6,7,8-HpCDD	1170					13C-1,2,3,4,6,7,8-HpCDD	81.4	23 - 140	
OCDD	11500					13C-OCDD	81.8	17 - 157	
2,3,7,8-TCDF	ND	0.794				13C-2,3,7,8-TCDF	85.0	24 - 169	
1,2,3,7,8-PeCDF	ND		1.12			13C-1,2,3,7,8-PeCDF	80.0	24 - 185	
2,3,4,7,8-PeCDF	ND		1.47			13C-2,3,4,7,8-PeCDF	80.0	21 - 178	
1,2,3,4,7,8-HxCDF	16.8			J		13C-1,2,3,4,7,8-HxCDF	80.9	26 - 152	
1,2,3,6,7,8-HxCDF	ND		3.58			13C-1,2,3,6,7,8-HxCDF	82.2	26 - 123	
2,3,4,6,7,8-HxCDF	7.44			J		13C-2,3,4,6,7,8-HxCDF	81.1	28 - 136	
1,2,3,7,8,9-HxCDF	2.43			J		13C-1,2,3,7,8,9-HxCDF	75.5	29 - 147	
1,2,3,4,6,7,8-HpCDF	174					13C-1,2,3,4,6,7,8-HpCDF	72.4	28 - 143	
1,2,3,4,7,8,9-HpCDF	26.3					13C-1,2,3,4,7,8,9-HpCDF	72.6	26 - 138	
OCDF	1030					13C-OCDF	72.9	17 - 157	
					CRS	37Cl-2,3,7,8-TCDD	91.8	35 - 197	
					Toxic Equivalent Quotient (TEQ) Data				
					TEQMinWHO2005Dioxin		23.6		
TOTALS									
Total TCDD	ND	1.31							
Total PeCDD	ND		7.65						
Total HxCDD	84.0		86.8						
Total HpCDD	1770								
Total TCDF	ND		2.79						
Total PeCDF	12.2		17.0						
Total HxCDF	219		224						
Total HpCDF	892		897						

DL - Sample specific estimated detection limit

EMPC - Estimated maximum possible concentration

LCL-UCL- Lower control limit - upper control limit

Min-The TEQ is calculated using zero for the concentration of congeners that are not detected.

Sample ID: Mouth					EPA Method 1613B				
Client Data			Sample Data		Laboratory Data				
Name:	McKesson Corporation		Matrix:	Aqueous	Lab Sample:	1500447-02	Date Received:	19-May-2015 9:24	
Project:	Arkwood		Sample Size:	0.9, 4 L	QC Batch:	B5F0002	Date Extracted:	01-Jun-2015 8:08	
Date Collected:	18-May-2015 12:00				Date Analyzed :	03-Jun-15 18:11	Column: ZB-5MS	Analyst: MAS	
Analyte	Conc. (pg/L)	DL	EMPC	Qualifiers	Labeled Standard		%R	LCL-UCL	Qualifiers
2B7F-6CDD	ND	1.33			IS	13C-2B7F-6CDD	77.8	25 - 1, 4	
1F7F-PeCDD	ND	0.944				13C-1F7F-PeCDD	8, .5	25 - 181	
1F7F-HxCDD	ND	2.98				13C-1F7F-HxCDD	78.0	32 - 141	
1F7F-HxCDD	19.0			J		13C-1F7F-HxCDD	83.8	28 - 130	
1F7F-HxCDD	3.89			J		13C-1F7F-HxCDD	81.9	32 - 141	
1F7F-HpCDD	879					13C-1F7F-HpCDD	82.0	23 - 140	
OCDD	9290					13C-OCDD	79.9	17 - 157	
2B7F-6CDF	ND	0.815				13C-2B7F-6CDF	82.0	24 - 1, 9	
1F7F-PeCDF	ND	1.35				13C-1F7F-PeCDF	84.8	24 - 185	
2B7F-PeCDF	ND		1., 0			13C-2B7F-PeCDF	85.8	21 - 178	
1F7F-HxCDF	13.3			J		13C-1F7F-HxCDF	85.1	2, - 152	
1F7F-HxCDF	ND		2.59			13C-1F7F-HxCDF	85.1	2, - 123	
2B7F-HxCDF	4.92			J		13C-2B7F-HxCDF	82.1	28 - 13,	
1F7F-HxCDF	1.81			J		13C-1F7F-HxCDF	7, .2	29 - 147	
1F7F-HpCDF	130					13C-1F7F-HpCDF	, 9.2	28 - 143	
1F7F-HpCDF	19.,			J		13C-1F7F-HpCDF	72.5	2, - 138	
OCDF	799					13C-OCDF	73.5	17 - 157	
					CRS	37Cl-2B7F-6CDD	59.7	35 - 197	
					Toxic Equivalent Quotient (TEQ) Data				
					6EQMinWHO2005Dioxin		17.,		
TOTALS									
6otal 6CDD	ND	1.33							
6otal PeCDD	ND	1.74							
6otal HxCDD	51.5		54.5						
6otal HpCDD	1310								
6otal 6CDF	ND	0.815							
6otal PeCDF	3.37		7.40						
6otal HxCDF	15,		1, 4						
6otal HpCDF	, 80								

DL - Sample specific estimated detection limit

EMPC - Estimated maximum possible concentration

LCL-UCL- Lower control limit - upper control limit

Min-6he 6EQ is calculated using zero for the concentration of congeners that are not detected.

DATA QUALIFIERS & ABBREVIATIONS

B	This compound was also detected in the method blank.
D	Dilution
E	The associated compound concentration exceeded the calibration range of the instrument.
H	Recovery and/or RPD was outside laboratory acceptance limits.
I	Chemical Interference
J	The amount detected is below the Lower Calibration Limit of the instrument.
*	See Cover Letter
Conc.	Concentration
DL	Sample-specific estimated detection limit
MDL	The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero in the matrix tested.
EMPC	Estimated Maximum Possible Concentration
NA	Not applicable
RL	Reporting Limit – concentrations that correspond to low calibration point
ND	Not Detected
TEQ	Toxic Equivalency

Unless otherwise noted, solid sample results are reported in dry weight. Tissue samples are reported in wet weight.

CERTIFICATIONS

Accrediting Authority	Certificate Number
California Department of Health – ELAP	2892
DoD ELAP - A2LA Accredited - ISO/IEC 17025:2005	3091.01
Florida Department of Health	E87777
Hawaii Department of Health	N/A
Louisiana Department of Environmental Quality	01977
Maine Department of Health	2014022
Michigan Department of Natural Resources	9932
Nevada Division of Environmental Protection	CA004132015-1
New Jersey Department of Environmental Protection	CA003
New York Department of Health	11411
North Carolina Department of Health & Human Services	06700
Oregon Laboratory Accreditation Program	4042-003
Pennsylvania Department of Environmental Protection	011
South Carolina Department of Health	87002001
Tennessee Department of Environment & Conservation	TN02996
Texas Commission on Environmental Quality	T104704189-15-6
Virginia Department of General Services	3138
Washington Department of Ecology	C584
Wisconsin Department of Natural Resources	998036160



Storage
Secured

1500447

Yes ☒ No ☐

Temp 1.9 °C☐ 14 days ☐ 7 days Specify: _____

Invoice to: Name James Phee	Company McKesson Corp	Address One Point Street 34th Flay	City San Francisco	State CA	Zip 94104	Ph# 913 238-8398	Fax#
Relinquished by: (Signature and Printed Name) James Phee	Date: 5/18	Time: 1410	Received by: (Signature and Printed Name) B. Benedict	Date: 05/19/05	Time: 0933		
Relinquished by: (Signature and Printed Name)	Date:	Time:	Received by: (Signature and Printed Name)	Date:	Time:		

[illegible]

ATTN: _____

[illegible]

Name: James Fleer
Company: McKesson Corporation
Address: One Post Street 34th Floor
City: San Francisco State: CA Zip: 94104
Phone: 913 238 8348 Fax: _____
Email: james.fleer@mcckesson.com
Matrix Types: DW = Drinking Water, EF = Effluent, PP = Pulp/Paper,
SD = Sediment, SL = Sludge, SO = Soil, WW = Wastewater, B = Blood,
AQ = Aqueous, O = Other

O = Other_____

Page 12 of 13

SAMPLE LOG-IN CHECKLIST



1500447

Vista Project #:

TAT

Std

Samples Arrival:	Date/Time 05/19/15 0924	Initials: UBB	Location: WR-2
			Shelf/Rack: NA
Logged In:	Date/Time 05/20/15 1214	Initials: UBB	Location: WR-2
			Shelf/Rack: B3
Delivered By:	FedEx	UPS	On Trac
			DHL
			Hand Delivered
			Other
Preservation:	Ice	Blue Ice	Dry Ice
			None
Temp °C: 1.8	(uncorrected)	Time: 0932	Thermometer ID: IR-1
Temp °C: 1.9	(corrected)		

		YES	NO	NA
Adequate Sample Volume Received? A3B containers		✓		
Holding Time Acceptable?		✓		
Shipping Container(s) Intact?		✓		
Shipping Custody Seals Intact?		✓		
Shipping Documentation Present?		✓		
Airbill	Trk # 1Z A4X 503 01 40632287	✓		
Sample Container Intact?		✓		
Sample Custody Seals Intact?				✓
Chain of Custody / Sample Documentation Present?		✓		
COC Anomaly/Sample Acceptance Form completed?				✓
If Chlorinated or Drinking Water Samples, Acceptable Preservation?				✓
Na ₂ S ₂ O ₃ Preservation Documented?	COC	Sample Container	None	
Shipping Container	Vista	Client	Retain	Return
				Dispose

Comments: